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# THE CLASSICAL WEEKLY

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## ROMAN FACTORIES

A knowledge of ancient economic conditions is to be obtained, not directly from ancient treatises, but indirectly, by collection of widely separated material, much of which is linguistic. So we may prepare to answer the questions, Did the Romans have factories? Were they like our modern factories?, by a study of the Latin verbal equivalents of the English word 'factory', combined with a survey of the passages in which these Latin words are found.

The equivalents for 'factory' suggested by dictionaries are *fabrica* and *officina*. Of these, *fabrica* is used in the concrete sense very infrequently and then with a very restricted meaning. Terence<sup>1</sup> uses it of a carpenter's shop. Cicero<sup>2</sup> applies it to the forge of Vulcan: Vulcanus, qui Lemni fabricae traditur praeuisse. This is its usual meaning, the workshop of a *faber*, a worker in hard materials, not a general artisan<sup>3</sup>. Quintilian<sup>4</sup> declares that *fabrica* was not a word of good standing in his time, but it is not clear whether he is referring to its abstract or to its concrete significance.

*Officina*, therefore, as a more frequent word, of a wider meaning, seems the better translation of the English word 'factory'. Derived by syncopation from *opificina*<sup>5</sup>, it denotes a place where work was done by artisans, *opifices*<sup>6</sup>, or *artifices*<sup>7</sup>. It is thus to be distinguished from an *apotheca*, where things were stored away, and from a *taberna*, where things to be sold were placed on exhibition. In one passage<sup>8</sup>, Suetonius seems to apply *officina* (*officinas promercaleium vestium*) to a dry-goods store (i. e. he makes it = *taberna*), though some understand the passage as referring to a factory for the manufacture of ready-made clothing. In general, however, the distinction laid down above between *officina*, *apotheca*, and *taberna* is observed. The principal Greek equivalents for *officina* were *συνεργιον* and *ἐργαστήριον*<sup>9</sup>. The head of an *officina*, the master workman or superintendent, was an *officinator*<sup>10</sup> or

*officinatrix*. In numerous passages<sup>11</sup>, *officina* occurs in a figurative sense.

Cicero, for example, applies it to the schools of the philosophers and the rhetoricians; Seneca uses it of the place where exposed children were mutilated that they might become professional beggars. Horace calls Canidia a 'glowing distillery (*officina*) of Colchian poisons'; and Juno and Ceres, in Apuleius's tale, bid Venus suppress Cupid, 'the public workshop of feminine failings', *vitiorum muliebrum publicam praecludas officinam*. In such figurative passages *officina* requires *quasi* or *tamquam* or other particles of apology, as a rule, only when used in a good sense<sup>12</sup>. This striking fact seems to indicate that the word was in frequent daily use, though the preeminently political and military character of the Latin literature which has been preserved to us makes it a rather rare word, except for that repository of industrial and technological terminology, Pliny's *Naturalis Historia*. There can be little question, however, that it is the best obtainable equivalent for our word 'factory'.

The breadth of the term will be made still clearer by a classification of the places to which *officina* was applied. It will be found that they may be divided into two classes: first, what may be called *shops* or *studios*, in which, from the nature of the work there done, production was possible only on a small scale; and, secondly, what we should call factories, where, from the nature of the industries, large-scale production was possible and may have been practiced.

In the first class, the shops in which wholesale production was obviously impossible, must be placed an artist's studio<sup>13</sup> and a barber-shop<sup>14</sup>, perhaps also a poultry-house (*ornithon*)<sup>15</sup>.

The second class, the establishments capable of wholesale production, was a far larger group. Most frequently mentioned, perhaps, are the armorers' shops<sup>16</sup>, common sights in every ancient city. Here were manufactured of iron and bronze, and, in times of stress, of even more valuable materials, the weapons

<sup>1</sup>Adelphi 584, 716.

<sup>2</sup>De Natura Deorum 3.55.

<sup>3</sup>Compare Blunrier, *Technologie und Terminologie der Gewerbe und Künste bei Griechen und Römern*, 2.166; Vegetius, Mil. 2.11 *fabricae <armorum>*.

<sup>4</sup>3.34.

<sup>5</sup>Plautus, Mil. 880; Julius Valerius, *Gesta Alexandri* 3.83.

<sup>6</sup>Cicero, De Officiis 1.150 *Opifices omnes in sordida arte versantur, nec vero quicquam ingenuum est habere officinam*. This is the stock passage to show the Roman contempt for the trades.

<sup>7</sup>Pliny, N. H. 36.105; Vitruvius 3. Praef.

<sup>8</sup>De Grammaticis 23.

<sup>9</sup>Corpus Gloss. Lat. s. v.

<sup>10</sup>Vitruvius 6.9 *cum <opus perfectum adspicietur> subtiliter, officinatoris probabitur exactio, in contrast with the credit due the architect for an excellent design*; Apuleius, Met. 9.6: *Corpus Gloss. Lat.*, s. v.; Index, Orelli-Henzen, s. v.

<sup>11</sup>Cicero, De Legibus 1.36, Orator 40, De Oratore 2.57, De Finibus 5.7, Phil. 2.35, Paradoxa 5, Pro Sexto Roscio 134; Horace, Epod. 17.35; Livy 39.8.7, 39.10.6; Pliny, N. H. 11.188; Seneca, *Controversiae* 5 (10). 33.2; Valerius Maximus 3.1.2, 4.8. Ext. 2; Apuleius, Met. 5.31; Dictys Cretensis 2.16.

<sup>12</sup>Krebs, *Antibarbarus der Lateinischen Sprache*, s. v.

<sup>13</sup>Pliny 34.46, 35.81, 35.143.

<sup>14</sup>Id., 36.165; Porphyrio, on Horace, *Serm.* 1.7.2.

<sup>15</sup>Columella 8.3.1, 8.3.8, 8.4.3, 8.5.19.

<sup>16</sup>Bellum Alexandrinum 7.2; Caesar, B. C. 1.34.5; Cicero, Phil. 7.13, Piso 87; Nepos, Agesilaus 3.2; Tacitus, *Historiae* 2.82.1; Quintus Curtius 4.9; Ammianus Marcellinus 31.16.7.

which ancient warfare demanded. Akin to these were the smithies, the blacksmith's forges, the places for the metal-workers<sup>17</sup>. But the term *officina* was applied to a great variety of industrial establishments: to a mint<sup>18</sup>; a cobbler's shop or shoe factory<sup>19</sup>, a glass factory<sup>20</sup>; a paper mill<sup>21</sup>; chemical factories, as in the white<sup>22</sup> and red lead<sup>23</sup> industries; indigo factories<sup>24</sup> and dyers' establishments<sup>25</sup>; the fullers<sup>26</sup> and the tanners' establishments<sup>27</sup>; chemical laboratories or drug factories<sup>28</sup>; houses for the production of medical and surgical devices<sup>29</sup>; places where perfumery<sup>30</sup> and lamp-black<sup>31</sup> were made; food factories, where, for example, fish-sauce was manufactured<sup>32</sup>; and even places where incense was prepared for the market<sup>33</sup>. Seneca<sup>34</sup>, in a tirade on the luxuries of civilization, groups together, as *officinae*, the establishments of weavers, smiths, perfumers, and singing and dancing masters. The term *officina* was used to designate both the potteries<sup>35</sup> and the brickyards<sup>36</sup>. Inscriptions on fresh blocks of marble<sup>37</sup> show that *officina* was also the designation of stone quarries, as well as of the shop of a stone-cutter, where marble columns were shaped<sup>38</sup>.

By this varied list of industrial establishments to which the Romans gave the term *officina*<sup>39</sup>, the existence at Rome of something corresponding in a general way to our factories seems well established. How close was this correspondence? According to the definition given in the Century Dictionary, s. v. Factory, 4, large scale production, usually by means of highly complex machinery, oftentimes with large numbers of highly specialized workmen, is the essential characteristic of the modern factory. It is dependent upon economic conditions in which the labor supply can move with freedom from place to place, and in which the raw materials of production and the finished products can be widely and cheaply gathered and distributed. Most important of these economic conditions perhaps are widespread industrial and political peace; easy means of communication, railroad, telegraph, telephone, and universal postage; common media of exchange, and a stable system of trade and financial credit.

Economic conditions in ancient Rome and Italy were apparently favorable for the development of a factory system like the modern. Rome enjoyed industrial and political peace for at least a part of the period of her power. The days when the gates of Janus were closed proved a blessing to industry and commerce. The arts and the trades received a new impulse of life with the release for industrial purposes of the wealth of the world which had already for a long time been pouring into the ruling city on the Tiber. The vast army of slaves, the great trade unions of freedmen<sup>40</sup>, found difficulty in filling the multifarious demands of the ancient metropolis suddenly awakened to all the novel desires of luxurious living. Rome herself exported but little—she could not meet her own needs—, but all sorts of manufactured articles poured in from all parts of Italy and the Empire. The entire known world was connected by that magnificent system of roads which made travel and hence overland commerce comparatively safe. The entire financial world had a single monetary standard, the Roman *denarius*, so that by this convenient medium of exchange trade became easy between distant nations. And lastly, the entire world of business spoke one common tongue, the Greek, the Attic *κοινή*. Conditions, as Christian historians have frequently noted, favorable as never before to the spread of a world-wide religion, were unusually favorable also to the spread of a universal industrial system, perhaps as favorable as in modern times before the invention of rapid transportation.

The ancients knew and practised the advantages of a division of labor. The evidence at Rome dates from the long list of manufactures in Plautus, *Aulularia* 508 ff., a list which, drawn from Greek sources, probably reflects conditions with which the Romans were familiar, down to the imperial inscriptions giving the varied functions of the slaves that made up a *familia urbana*<sup>41</sup>. Even in the production of comparatively simple articles, as a vase, several artisans were engaged<sup>42</sup>. Furthermore, about the middle of the first century B. C., the Romans recognized and took advantage of the adaptability of certain districts to certain classes of manufactures, that is, they divided labor not merely among individuals but also among towns and communities<sup>43</sup>. In general, however, the division of labor practised by the Romans appears never to have been as extreme as in modern industries, in which many of the workmen have little or no conception of the general process of manufacture or of the purpose of the completed article. The ancient workman seems to have preserved much of the spirit and pride of the artisan.

The Romans were also familiar with large scale production, which is another feature of the modern industrial system. In many industries we hear of large

<sup>17</sup>Bellum Africanum 20.3; Cicero, Verr. 4.54; Horace, Carm. 1.4.8; Phaedrus 4.8.3; Seneca, Epp. 90.19; Pliny 8.222, 13.128, 16.23, 18.89, 28.226, 33.139, 33.145, 34.9, 34.68, 34.107, 34.134, 35.182, 36.9; Vitruvius 7.8.2; Scriptores Historiae Augustae, XXX Tyr. 8.6.

<sup>18</sup>Livy 6.20.13.

<sup>19</sup>Pliny 10.121.

<sup>20</sup>Id., 36.193, 36.195.

<sup>21</sup>Id., 18.80.

<sup>22</sup>Id., 34.175.

<sup>23</sup>Id., 33.120, 33.122; Vitruvius 7.9.4.

<sup>24</sup>Pliny 9.129, 35.46.

<sup>25</sup>Id., 14.68, 37.122.

<sup>26</sup>Id., 35.143, 35.175.

<sup>27</sup>Id., 17.51, 24.175.

<sup>28</sup>Id., 24.4; Horace, Epod. 17.35; Porphyrio, on Horace, Serm. 1.7.2.

<sup>29</sup>Pliny 22.117.

<sup>30</sup>Id., 13.17; Seneca, Epp. 90.19.

<sup>31</sup>Pliny 35.41.

<sup>32</sup>Columella 8.7.12; Scholiast on Horace, Serm. 2.5.44.

<sup>33</sup>Pliny 12.50.

<sup>34</sup>Epp. 90.19.

<sup>35</sup>Pliny 35.155, 35.161.

<sup>36</sup>Compare the inscriptions *ex of., ex off.* found upon many bricks and tiles, especially of the second and third centuries of the Empire. As Henry Dressel has shown, Introduction to C.I.L. 15.4, in the earlier period *figlina* was used for the general brickyard, while *officina* designated the particular workshop of an individual workman, of which there must have been several in each *figlina*. This appears like a technical division of terminology, unparalleled in any other industry.

<sup>37</sup>Dessau 8716, 8722, 8725.

<sup>38</sup>Pliny 36.90.

<sup>39</sup>*Officina* is sometimes an abstract noun, = 'making', 'formation'; compare Pliny 11.2.

<sup>40</sup>Compare Waltzing, *Étude Historique sur les Corporations professionnelles chez les Romains*.

<sup>41</sup>Compare e. g. Dessau 1514; Dill, *Roman Society from Nero to Marcus Aurelius*, 282.

<sup>42</sup>Compare Augustine, *De Civitate Dei* 7.4.

<sup>43</sup>Compare Ferrero, *The Greatness and Decline of Rome*, 2.134.

bodies of slave workmen, as for example the *plurimi libarii* used by Atticus in the publishing business<sup>44</sup>. Large scale production of tiles and bricks is proved by the use of wooden or metallic stamps to mark the manufacturer's name upon them. But here another difference is to be noted between ancient and modern conditions: while produced in large numbers, the products of ancient industry were never identical. The day of universal parts was still distant. In this respect also Roman craft did not lose its artisan character. The finished product tended to reflect the skill and the taste of the individual workman.

The chief reason for the individuality of Roman workmen and of the finished product was the lack of high-power machinery. The Romans had some knowledge of machinery. In addition to mechanical contrivances in warfare, forms of simple industrial machinery, such as the olive-press and the wine-press, were in common use. Such machines required but few workmen and had but a limited capacity. The use of complicated machinery is conditioned upon the possession of adequate means of producing power; and in the classical period the Romans did not even know the use of water-wheels.

This lack of mechanical means for the production of power seems the chief reason why the Roman *officinae* did not correspond exactly to our factories. Rome's great industrial revolution of the first century B. C.<sup>45</sup>, with the economic conditions that accompanied and followed it, including the adoption of such sound economic principles as the division of labor and large scale production, never culminated, as did the industrial revolution of the nineteenth century, in a great factory system. The growth of the modern factory has been conditioned and accompanied by the development of high-power engines and high-power machinery; and it was for lack of the latter that the Roman *officinae* were never factories in the full sense of the modern term, but rather great workshops in which each workman and each product retained its own individuality.

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### HORACE AND OMAR KHAYYAM<sup>1</sup>

Love and wine persist as themes of lyric poetry. If one were asked to indicate a correspondence between Horace and Omar Khayyam, one would think first, perhaps, of these topics common to both. The similarity, however, lies deeper than this. It is to be found not in the fact that the two poets treat the same themes but rather in the attitude assumed toward the material world, or, to put it more comprehensively, in their philosophy of life. For them the present is the only living truth: yesterday is dead and to-morrow yet unborn. In both the uncertainty of the future is con-

tinually dwelt upon. In fact, in the Odes and in the Rubaiyat there is a striking parallelism not only in theme and philosophic attitude toward life but even in particular expression. Andrew Lang has said:

The great charm of all ancient literatures, one often thinks, is the finding of ourselves in the past. It is as if the fable of repeated and recurring lives were true; as if in the faith, or unbelief, or merriment, or despair, or courage, or cowardice of men long dead, we heard the echoes of our own thoughts, and the beating of hearts that were once our own.

It seems to us that in Omar Khayyam we may almost find a reincarnation of the spirit of Horace and in both poets the eternal soul of the human race. The similarity is so great as to invite particular comparison. In some cases even the words employed are nearly identical.

Wake! For the Sun who scatter'd into flight  
The Stars before him from the Field of Night,  
Drives Night along with them from Heav'n and strikes  
The Sultan's Turret with a Shaft of Light.

Rubaiyat I.

In Horace, Odes 3.21.34, we have a similar expression in a more condensed form: *dum rediens fugat astra Phoebus*.

Certain lines of Milton (L'Allegro 49-50) are of interest in this connection:

While the cock with lively din  
Scatters the rear of Darkness thin.

We have some expressions of like thought in praise of wine. In fact wine seems to receive more attention than love.

Ah, my Beloved, fill the cup that clears  
To-day of past Regret and future Fears.

Rubaiyat XXI. 1-2.

siccis omnia nam dura deus proposuit neque  
mordaces aliter diffugiunt sollicitudines.  
Quis post vina gravem militiam aut pauperiem crepat?  
Odes 1.18.3-5.

nunc vino pellite curas.—Odes 1.7.31.  
A Book of Verses underneath the Bough,  
A Jug of Wine, a Loaf of Bread—and Thou  
Beside me singing in the Wilderness—  
Oh, Wilderness were Paradise enow!

Rubaiyat XII.

Hic in reducta valle caniculae  
vitabis aestus, et fide Teia  
dices laborantis in uno  
Penelopen vitreamque Circen;  
hic innocentis pocula Lesbii  
duces sub umbra.—Odes 1.17.17-22.

Waste not your Hour, nor in vain pursuit  
Of This and That endeavour and dispute;  
Better be jocund with the fruitful grape  
Than sadder after none, or bitter Fruit.

Rubaiyat LIV.

sic tu sapiens finire memento  
tristitiam vitaeque labores  
molli, Plance, mero, seu te fulgentia signis  
castra tenent seu densa tenebit  
Tiburis umbra tui.—Odes 1.7.17-21.

<sup>44</sup>Nepos, Atticus 13.3.

<sup>45</sup>Compare Ferrero, 1.309 ff.

<sup>1</sup>This paper is essentially a comparison of the Odes of Horace with Edward Fitzgerald's version of the Rubaiyat of Omar Khayyam (fourth edition).